Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

OTA	E	tute for form 1	449A/PTO		Complete if Known		
	\$C145	NEODMAI	TION DISCLA	OCHDE	APPLICATION NUMBER	10/806,956	
를 MAR 2 5	11114		TION DISCLO NT BY APPL		FILING DATE	03/23/2004	
RADEM	TOE	SIAIEME	NIDIAPPL	LICANI	FIRST NAMED INVENTOR	Choi et al.	
RADEM	His	(use as many	sheets as necessa	ry)	Group Art Unit	2834	
ľ	Sheet	1	of	5	Examiner Name	Dougherty, Thomas M.	
					Attorney Docket Number	PA128-04D09	

U.S. PATENT DOCUMENTS

Examiner	Cite	U.S. Patent D	locument Kind Code ²	Name of Palentee or Applicant	Date of Publication of	Pages, Columns, Lines, Where Relevant
Initials* No.1		Number (il known)		of Cited Document	Cited Document MM-DD-YYYY	Passages or Relevant Figures Appear
TWD	D1:	4,731,155		Napoli et al.	3/15/1988 ·	· -
	D2	5,425,848		Haisma et al.	6/20/1995	
	D3	5,772,905		Chou	6/30/1998	
	D4	6,309,580	B1	Chou	10/30/2001	
	D5	6,334,960	B1	Willson et al.	1/1/2002	
	D6	6,391,217	B2	Schaffer et al.	5/21/2002	
	D7	6,696,220	B2	Bailey et al.	2/24/2004	
	D8	2002/0177319	A1	Chou	11/28/2002	
	D9	6,713,238	B1	Chou et al.	3/30/2004	
	D10	3,527,062		Bilinski et al.	9/8/1970	
	D11	5,063,321		Carter	11/5/1991	
	D12	5,270,984		Mine	12/14/1993	
	D13	6,411,010	B1	Suzuki et al.	6/25/2002	
	D14	6,467,761	B1	Amatucci et al.	10/22/2002	
	D15	6,518,189	B1	Chou	2/11/2003	
	D16	2004/0192041	A1	Jeong et al.	9/30/2004	
	D17	6,188,150	B1	Spence	2/13/2001	
740	D18	6,828,244	B2	Chou	12/7/2004	

Examiner Signature

The Date Considered S-2-05

*Examiner: Initial if reference considered, whether or not citation is a conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the Indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450.. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

PTO/SB/08A (08-03)
Approved for use through 7/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute f	or form 1449.	A/PTO		Comple	Complete if Known		
1NIE4	ODMATIO	N DISCL	OCUDE	APPLICATION NUMBER	10/806,956		
	ORMATIO LTEMENT			FILING DATE	03/23/2004		
314	VI EIVIEN I	DIAPPL	JCAN I	FIRST NAMED INVENTOR	Choi et al.		
(us	se as many she	ets as necessa	ny)	Group Art Unit	2834		
Sheet	2	of	5	Examiner Name	Dougherty, Thomas M.		
	L			Attorney Docket Number	PA128-04D09		

				U.S. PATENT DOCUMEN	TS	
Examiner Initials*	Cite No.1	U.S. Patent Do	cument Kind Code ^z (if known)	Name of Patentee or Applicant of Cited Document	Oate of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
m	D19	6,809,356	82	Chou	10/26/2004	
7	D20	2004/0197843	A1	Chou et al.	10/7/2004	
	D21	2004/0156108	A1	Chou et al.	8/12/2004	
	022	2004/0137734	A1	Chou et al.	7/15/2004	
	D23	2004/0131718	A1	Chou et al.	7/8/2004	
	D24	2004/0118809	A1	Chou et al.	6/24/2004	
	D25	2004/0046288	A1	Chou	3/11/2004	
	D26	2003/0080472	A1 ·	Chou	5/1/2003	
	D27	2003/0034329	A1	Chou	2/20/2003	
	D28	2002/0042027	A1	Chou et al.	4/11/2002	
	D29	6,580,172	B2	Mancini et al.	6/17/2003	
	D30	4,512,848		Deckman et al.	4/23/1985	
	D31	6,517,995	B1	Jacobenson et al.	2/11/2003	
	D32	2004/0110856	A1	Young et al.	6/10/2004	
	D33	5,028,366		Harakal et al.	7/2/1991	
	D34	5,601,641		Stephens	2/11/1997	
	D35	5,849,209		Kindt-Larsen et al.	12/15/1998	
too	D36	5,849,222		Jen et al.	12/15/1998	

Examiner Signature

Thomas 74. Qualitat

Date Considered

5 - 2 - 05

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

^{*}Examiner: Initial if reference considered, whether or not citation is if conformance with IPEP 609. Draw line through diation if not in conformance and not considered. Include copy of this form with next communication to applicants unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ² Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08A (08-03)

Approved for use through 7/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitute fo	or form 1449A/	РТО		Comple	Complete if Known			
INE	ORMATIO	N DISCL	OCUDE	APPLICATION NUMBER	10/806,956			
	ATEMENT		-	FILING DATE	03/23/2004			
317		DIAFFE	JOAN	FIRST NAMED INVENTOR	Choi et al.			
				Group Art Unit	2834			
(L	ise as many shee	ets as necessa	ry)	Examiner Name	Dougherty, Thomas M.			
Sheet	3	of	5	Attorney Docket Number	PA128-04D09			

			FOREIGN	PATENT DOCUMENTS			
Cite No.1	Office	Foreign Patent Docum	ent Kind Code ^s (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Cotumns, Lines, Where Relevant Passages or Relevant Figures Appear	T°
T	T	1		T			Т
D37	wo	2004/016406		Sreenivasan	2/26/2004		
D38	wo	02/07199		Chou	1/24/2002		
D39	wo	2004/114016		Chou et al.	12/29/2004		•
D40	wo	99/05724		Chou et al.	2/4/1999		
D41	wo	03/010289		Chou et al.	2/6/2003		
D42	wo	03/079416		Chou	9/25/2003		
D43	wo	03/099536		Chou et al.	12/4/2003		
D44	wo	2004/013693		· Watts et al.	2/12/2004		
		<u> </u>				·	
		_					
	D37 D38 D39 D40 D41 D42 D43	D37 WO D38 WO D39 WO D40 WO D41 WO D42 WO D43 WO D44 WO	Cile No.¹ Office Number ^A D37 WO 2004/016406 D38 WO 02/07199 D39 WO 2004/114016 D40 WO 99/05724 D41 WO 03/010289 D42 WO 03/079416 D43 WO 03/099536 D44 WO 2004/013693	D37	D37	Date of Publication of Cited Document Name of Patentee or Applicant of Cited Document MM-DD-YYYY	Date of Publication of Cited Document Date of Publication of Cited Document Date of Publication of Cited Document Pages, Columns, Lines, Where Relevant Passages or Retevant Passages or Retev

Examiner Date 5-2-05 Signature Considered

*Examiner: Initial if reference considered, whether or not citation is a conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Eater Office that issued the document, by the two-letter code (WIPO Standard ST.3). 1 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the senal number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450.. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

PTO/SB/08A (08-03)

Approved for use through 7/31/2006. OMB 0651-0031 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO				Comple	Complete if Known		
INFC	RMATION	DISCLO	SURE	APPLICATION NUMBER	10/806,956		
STA	TEMENT B	Y APPL	ICANT	FILING DATE	03/23/2004		
				FIRST NAMED INVENTOR	Choi et al.		
(use	e as many sheets	as necessar)	Y)	Group Art Unit	2834		
Sheet	4	of	5	Examiner Name	Dougherty, Thomas M.		
				Attorney Docket Number	PA128-04D09		

OTHER PRIC	OR ART	NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite, No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
			
DOWN	D45	Chou, Nanoimprint Lithography and Lithographically Induced Self-Assembly, MRS Bulletin, pp. 512 - 517, 7/1/2001	
ant	D46	Choi et al., Design of Orientation Stages for Step and Flash Imprint Lithography, Precision Engineering, pp. 192 - 193 1/1/2001	
Theo	D47	Colburn et al., Step and Flash Imprint Lithography for sub-100 nm Patterning, Proceedings of SPIE Vol. 3997, pp. 453 - 457, 1/1/2000	
Track	D48	Chou et al., Imprint Lithography with 25-Nanometer Resolution, Science Vol. 272, pp. 85 - 87, 4/5/1996	
7MD	D49	Chou et al., Imprint Lithography with Sub-10 nm Feature Size and High Throughput, Microelectronic Engineering 35, pp. 237 - 240, 1/1/1997	
MIC	D50	Haisma et al., Mold-assisted Nanolithography: A Process for Reliable Pattern Replication, J. Vac. Sci. Technol. B, pp 4124 - 4128, 11/1/1996	
THIC	D51	Chou et al., Imprint of Sub-25 nm Vias and Trenches in Polymers, Appl. Phys. Lett. 67 (21), 11/20/1995	
TMO	D52	Johnson et al., Advances in Step and Flash Inprint Lithography, SPIE Microlithography Conference, 2/23/2003	
3 10	5.50	Chou et al., Lithographically Induced Self-assembly of Periodic Polymer Micropillar Arrays, J. Vac. Sci. Technol, B 17 (6), pp. 3197 - 3202, 11/1/1999	

Examiner	11			Date	
Signature	Thomas	JM 6	melain	Considered	8-2-03

^{*}Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609, traw line through citation if not in conformance and not considered. Include copy of this form with next communication of applicant.

Applicant's unique citation designation number (optional). Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file In the Chiecton of Information is required by 37 CFR 1.97 and 1.98. The Information is required to obtain of retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

PTO/SB/08A (08-03) Approved for use through 7/31/2006. OMB 0651-0031

PA128-04D09

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number Substitute for form 1449A/PTO Complete if Known APPLICATION 10/806,956 INFORMATION DISCLOSURE NUMBER STATEMENT BY APPLICANT FILING DATE 03/23/2004 FIRST NAMED Choi et al. **INVENTOR** (use as many sheets as necessary) 2834 **Group Art Unit Examiner Name** Dougherty, Thomas M. Sheet 5 of 5

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS							
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²				

Attorney Docket Number

ZMD	D54	Colburn et al., Step and Flash Imprint Lithography: A New Approach to High-Resolution Patterning, Proc. Of SPIE, vol. 3676, 3/1/1999	
32	D55	Chou et al., Ultrafast and Direct Imprint of Nanostructures in Silicon, Nature, Col. 417, (June 2002), pp. 835-837, 6/1/2002	
TMD	D56	Chou et al., Nanoimprint Lithography, Journal of Vacuum Science Technolgoy B 14(16), pp. 4129-4133, 11/1/1996	
TWO	D57	Colburn et al., Development and Advantages of Step-and-Flash Lithography, Solid State Technology, 7/1/2001	
7700	D58	Colburn et al., Characterization and Modeling of Volumetric and Mechanical Properties for Step and Flash Imprint Lithography Photopolymers, Journal of Vacuum Science Technology. Vol b. 19(6), 11/1/2001	-
two	D59	Bailey et al., Step and Flash Imprint Lithography: Defect Analysis, Journal of Vacuum Science, B 19(6), pp. 2806-2810, 11/1/2001	
mo	D60	Bailey et al., Step and Flash Imprint Lithography: Template Surface Treatment and Defect Analysis, Journal of Vacuum Science, B 18(6), pp. 3572-3577, 11/1/2000	
Cent	D61	Schneider et al., Stripes of Partially Fluorinated Alkyl Chains: Dipolar Langmuir Monolayers	

Examiner Signature	61. 3	Date Considered	8-2-06
	1 9 Mars 17.	Control of the second	7-6-10

^{*}Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 6.3. Draw line through citation if not in conformance and not considered. Include copy of this form with part communication to employed.

and not considered. Include copy of this form with next communication of applicant.

Applicant's unique citation designation number (optional). Applicant is to place a check and here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450.. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.